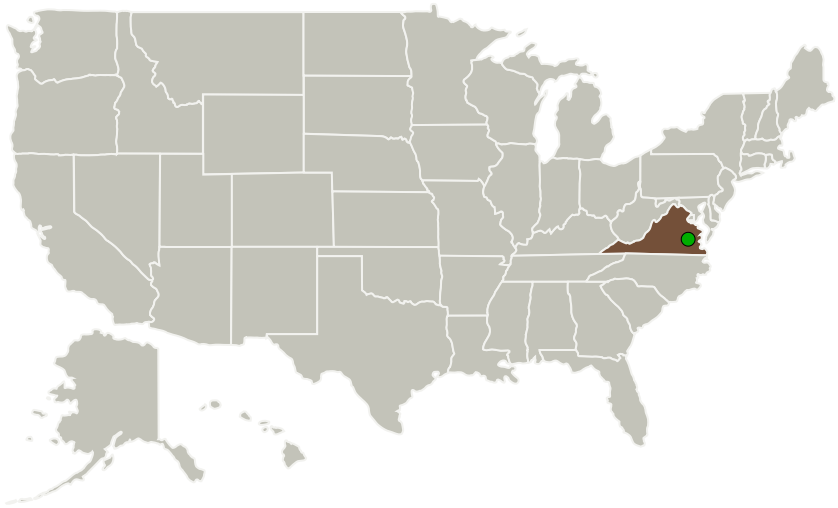
Metroplex Coordinated Runway Scheduling, Phase I

Completed Technology Project (2012 - 2012)

Project Introduction

NASA's System Oriented Runway Management (SORM) project is studying operational concepts and algorithms to improve the efficiency and capacity of metroplex operations, where performance is measured not only at the runways but across the airport surface and metroplex airspace. Current SORM research focuses on an approach that plans the airport configuration – the runway configuration and other policies for how classes of flights use metroplex resources. This approach is appropriate for near-term implementation, as it fits within current operations. This project develops an alternative, longer-term approach to SORM that coordinates the trajectory planning for individual flights. NASA is studying future arrival and departure traffic management systems that plan portions of trajectories for each flight. NASA's research efforts each focus on one part of the traffic management problem. This project studies new approaches that coordinate these systems, to achieve increased traffic management effectiveness through a system perspective. In Phase 1, various operational concepts and mathematical approaches will be explored. This approach was originally part of the SORM concept before research focused on the near-term, aggregate approach. The proposed project compliments NASA's research portfolio, contributing work of direct relevance to Airspace Systems Program objectives and providing a foundation for future, advanced SORM research.

Primary U.S. Work Locations and Key Partners



Metroplex Coordinated Runway Scheduling, Phase I

Table of Contents

Project Introduction	1
Primary U.S. Work Locations and Key Partners	1
Project Transitions	2
Images	2
Organizational Responsibility	2
Project Management	2
Technology Maturity (TRL)	2
Technology Areas	3
Target Destinations	3

Metroplex Coordinated Runway Scheduling, Phase I

Completed Technology Project (2012 - 2012)

Organizations Performing Work	Role	Type	Location
Mosaic ATM, Inc.	Lead Organization	Industry	Leesburg, Virginia
Langley Research Center(LaRC)	Supporting Organization	NASA Center	Hampton, Virginia

Primary U.S. Work Locations
Virginia

Project Transitions

February 2012: Project Start

August 2012: Closed out

Closeout Documentation:

- Final Summary Chart*(https://techport.nasa.gov/file/140675)*

Images

Final Summary Chart Image
Metroplex Coordinated Runway Scheduling, Phase I Project Image *(https://techport.nasa.gov/image/131824)*

Organizational Responsibility

Responsible Mission Directorate:
Space Technology Mission Directorate (STMD)

Lead Organization:
Mosaic ATM, Inc.

Responsible Program:
Small Business Innovation Research/Small Business Tech Transfer

Project Management

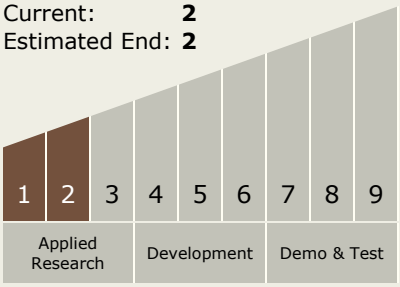
Program Director:
Jason L Kessler

Program Manager:
Carlos Torrez

Principal Investigator:
Stephen Atkins

Technology Maturity (TRL)

Start: **1**
Current: **2**
Estimated End: **2**



Metroplex Coordinated Runway Scheduling, Phase I

Completed Technology Project (2012 - 2012)

Technology Areas

Primary:

- TX16 Air Traffic Management and Range Tracking Systems
  - TX16.3 Traffic Management Concepts

Target Destinations

The Sun, Earth, The Moon, Mars, Others Inside the Solar System, Outside the Solar System